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**DIRECTORY OF RESERVE MEDICAL
PERSONNEL**

Report RA902R1

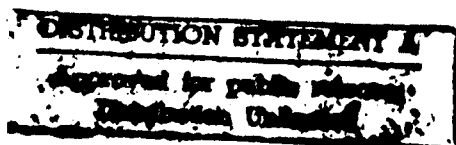
June 1990

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<p>The automated Unit Directory of Selected Reserve Medical Personnel assists the Joint Medical Readiness and Training Center (JMRTC) in planning the work of the mobile teams responsible for conducting the nonresident Combat Casualty Care Courses (C4). The students are reserve component health care professionals from the four Military Services.</p> <p>The directory operates on personal computers. In addition to providing medical manpower information, it uses color graphics to display unit locations overlaid on road maps.</p> <p>Trip planning time has been reduced and C4 training is being offered to a wider audience.</p> <p>In this report, we discuss expansions to the directory that would be useful to JMRTC and other potential users. Two appendices are included, a users guide and a software maintenance guide.</p>					
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Executive Summary

DIRECTORY OF RESERVE MEDICAL PERSONNEL

We developed the automated Unit Directory of Selected Reserve Medical Personnel to assist the Joint Medical Readiness Training Center (JMRTC) plan the work of mobile training teams responsible for conducting the nonresident Combat Casualty Care Course (C4). The students are physicians, dentists, nurses, and medical enlisted personnel assigned to reserve component units of the four Military Services. The directory operates on personal computers.

Prior to the development of the directory, the JMRTC relied on printed directories published by each reserve component. They failed to include much of the needed information and were difficult to use. The automated directory makes more information available to planners, collates the information for all reserve components, and computes the mileage between training sites and reserve units. In addition to providing tabular data, the directory uses color graphics superimposed on road maps to display unit locations.

The directory is being used successfully by the JMRTC. Trip planning time has been reduced, and the training trips are now more efficient because the new system identifies more potential students in each geographical area.

Although the directory was designed for administering the C4 program, it has other potential applications. It can be used by a single Service or reserve component to plan mobile training team visits for other health-care courses. The directory can also be helpful to staffs involved in Joint Service medical mobilization planning. In this report, we discuss expansions to the directory that would be useful to JMRTC and other potential users.

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CHAPTER 1

BACKGROUND

The Military Medicine Education Institute (MMEI)¹ asked the Logistics Management Institute (LMI) to develop a personal-computer (PC)-based information system for locating reserve component units with medical personnel. The system we developed, the Unit Directory of Selected Reserve Medical Personnel, is being used by the Joint Medical Readiness Training Center (JMRTC) at Fort Sam Houston, San Antonio, Texas. The unit directory helps JMRTC plan the work of mobile medical training teams responsible for conducting the nonresident Combat Casualty Care Course (C4).

The objective of C4 training is to prepare medical personnel, primarily physicians and nurses, to live and practice in the battlefield area. Currently, two C4s are taught. The resident course at Camp Bullis, Texas, takes 9 days to complete, is taught in a field environment, and provides training to mostly active military personnel. The nonresident C4, which the unit directory supports, encompasses personnel assigned to units of the Army National Guard (ARNG), U.S. Army Reserve (USAR), U.S. Naval Reserve (USNR), U.S. Marine Corps Reserve (USMCR),² Air National Guard (ANG), and U.S. Air Force Reserve (USAFR). It is designed into three 2- to 2½-day phases, or modules, that enable a reservist to complete the course over a 3-year period.

Phases I and III are delivered by JMRTC mobile training teams to sites close to clusters of reserve units and are taught in a classroom setting. Phase II, the field training exercise, is given at regional training sites in Puerto Rico, Wisconsin, California, Massachusetts, and Mississippi.

Phase I includes lectures on nuclear, biological, chemical (NBC) warfare, environmental/preventive medicine, and quad-service medical management. Phase II is the field training exercise on battlefield patient care from the point of

¹MMEI is a component of the Uniformed Services University of Health Sciences, located in Bethesda, Maryland. The JMRTC is a field element of MMEI.

²Health-care personnel assigned to USMCR units are members of the USNR.

injury to the battalion aid station. In Phase III, the student is required to complete one of the following seven specialized courses:

- Advanced Trauma Life Support
- Advanced Burn Life Support
- Advanced Cardiac Life Support
- Prehospital Trauma Life Support³
- Combat Casualty Care Nursing
- Deployment Medicine
- Combat Anesthesia.

To control costs and maximize attendance by members of all reserve components, the training team itinerary must be planned carefully. Prior to the development of the automated directory, the JMRTC encountered difficulty identifying the appropriate reserve units and the potential students. It relied on printed directories of medical units prepared by each of the reserve components, and those directories were inadequate for the following reasons:

- They excluded nonmedical units that have medical billets and medical personnel. These personnel were almost never invited to attend courses given in their geographic areas.
- They did not contain information on the number and type of medical personnel assigned to the medical units. Without that information, the JMRTC had difficulty estimating the number of students eligible for training at a given location.
- They did not show the geographic location of parts of a medical unit (detachments) that are separated from the unit headquarters.
- They did not help in computing mileage between medical units. Mileage calculations were made by using road maps in conjunction with the five different reserve component directories.

³Prehospital Trauma Life Support is designed for enlisted personnel.

The new automated directory solves all of these problems:

- It expands the information previously available to JMRTC from printed directories
- It collates unit information from all reserve components into a single Joint Service Directory
- It computes the specific mileage between a training site and all units located within 250 miles of that site and displays this information graphically with road maps.

The automated directory helps JMRTC deliver the C4 to more students and improves the efficiency of the training teams. It also reduces the time required to develop the trip plans for the teams.

The automated directory was conceived and financed by MMEI. Other DoD organizations that want to use the system should contact MMEI.

CHAPTER 2

DESIGN OF THE UNIT DIRECTORY

This chapter provides an overview of the design of the system. A complete users guide is presented in Appendix A and a maintenance manual is provided in Appendix B.

The automated directory provides the user with answers to the following kinds of questions about reserve component units with assigned medical personnel.

- What units are located in [name of state] or within 150 miles of [city in named state] crossing state boundaries?
- What are the medical duty assignments of the personnel in the selected set of units or in any specific unit within the set?
- What are the mailing address and phone number of each unit?
- What are the major roads surrounding the selected units?

SCOPE

The directory holds data on 3,640 Selected Reserve units, some of which are detachments of larger medical units.¹ The system captures information at the lowest level of unit organization identified with a unit identification code (UIC). Table 2-1 distributes these units by Service and reserve component.

These 3,640 units contain 97,096 personnel who hold medical assignments. Table 2-2 distributes the personnel by Service and reserve component.

¹In the National Guard, split units are located within the same state. In the Reserve, the detachments may be spread among several states.

TABLE 2-1
NUMBER OF SELECTED RESERVE UNITS IN THE DIRECTORY
(As of August 1989)

Service	Reserve component	Medical units	Nonmedical units ^a	Total
Army	National Guard	248	802	1,050
	Reserve	460	522	982
Navy ^b	Reserve	467	752	1,219
Air Force	National Guard	116	148	264
	Reserve	91	34	125
All Services	Total	1,382	2,258	3,640

^a These nonmedical units have personnel who are assigned to medical positions.

^b Includes units of the USNR and USMCR. Medical personnel assigned to USMCR units are members of the USNR.

TABLE 2-2
NUMBER OF PERSONNEL IN THE DIRECTORY ASSIGNED
TO MEDICAL POSITIONS IN SELECTED RESERVE UNITS
(As of August 1989)

Service	Reserve component	Medical units	Nonmedical units	Total
Army	National Guard	12,538	9,460	21,998
	Reserve	39,014	2,500	41,514
Navy	Reserve	15,943	2,699	18,642
Air Force	National Guard	5,319	357	5,676
	Reserve	9,122	144	9,266
All Services	Total	81,936	15,160	97,096

Note: These figures exclude personnel awaiting or undergoing initial skill training (primarily enlisted personnel). These figures also exclude individual mobilization augmentees (IMAs) for all Services. Air Force IMA personnel are shown separately in the directory.

Personnel are selected for inclusion in the directory based on their duty assignment code rather than on their primary skill code.² The duty assignment code indicates the job the individual is currently filling or will likely perform if the unit mobilizes. Some personnel are assigned to medical jobs that do not match their primary skills. The directory is based on duty assignment because the purpose of supplementary training and sustainment training is to help people perform their likely mobilization duties. The directory can be modified to add the primary skill codes of personnel.

The directory excludes personnel awaiting or undergoing initial skill training. Nearly all of these are enlisted personnel. Those who are undergoing training are in training centers and schools away from their reserve units. Those who are awaiting initial training are not qualified for C4 training.

DATA SOURCES

Table 2-3 shows the data sources used to identify medical personnel and unit locations.

TABLE 2-3
DATA SOURCES FOR THE DIRECTORY

Information	Service	Data source
Assigned personnel ^a	Army and Air Force	Reserve Components Common Personnel Data System (RCCPDS)
	Navy	Inactive Officer/Enlisted Master files
Unit address information	All Services	Unit Address Report
	Army	Directory of Army National Guard medical units Directory of USAR AMEDD units
	Air Force	Air National Guard medical technicians directory Air Force Reserve medical units by state and city
	Navy	Naval Surface Reserve Directory

Note: AMEDD = Army Medical Department

^a As of August 1989.

²All USNR personnel are included based on their primary skill code because duty assignment data are not available for about one-third of the medical personnel.

The major data source for the unit address information is the Defense Manpower Data Center Unit Address Report. We supplemented information from that report with data from reports produced by the Services. The quality of the address information in the directory is very good; the addresses are complete for 97.7 percent of the units. Telephone numbers are available for 88 percent of the medical units and 47 percent of the nonmedical units. Medical units contacted by JMF:TC can often provide telephone numbers for nearby nonmedical units. As the directory is used, the missing telephone numbers will be added to the directory by JMRTC.

The RCCPDS is the source for information on Army and Air Force personnel. The Navy data were pulled from the Inactive Officer/Enlisted Master files maintained by the Naval Reserve Personnel Center (NRPC).

SYSTEM OPERATION

The system is easy to learn and easy to use. We have trained operators to use it in about 30 minutes. The users guide (Appendix A) is a self-teaching tool. In this section, we describe the process of selecting units and generating reports.

Unit Selection

The first step in selecting units is to define a set of units. To do so, a selection must be made from each of the following categories:

- Unit type
- Service component
- Corps
- Location.

Unit Type

Three options are available under unit type:

- All units
- Medical
- Nonmedical.

Units are defined as either medical or nonmedical. An example of a medical unit is a 1,000-bed General Hospital; an example of a nonmedical unit is an F-16 squadron that contains a medical element. The user can restrict the units selected to either medical units or nonmedical units or can decide to display both types of units.

Service Component

Seven options are available in selecting the Service component:

- All Components
- ARNG
- USAR
- AFR
- ANG
- NR (includes USMCR)
- IMA (Air Force Medical IMAs).

The user can select one or more Service components. JMRTC users usually select the "All Components" option in order to display all units in a given geographic area. The next step enables the user to further define the units selected for display.

Corps

Eleven options are available in selecting the corps:

- All Personnel
- Enlisted
- Warrant Officers
- All Officers
- Medical Corps
- Nurse Corps
- Medical Specialist Corps
- Dental Corps

- Medical Service Corps
- Veterinary Corps
- Biomedical Science Corps.

The corps options enable the user to display only those units that have specific types of health-care specialists. For example, if the user checks "Medical Corps," the directory will display only those units that have physicians and will exclude all other units. The users can select one or more specialty groups or check the "All Personnel" category to ensure all units are displayed.

Location

The final unit selection is made among five choices for location:

- All Locations
- State
- One-Digit Zip Code
- Three-Digit Zip Code
- Five-Digit Zip Code and Radius in Miles.

The location selection limits the units chosen to a specific geographical area. When the user selects "All Locations," all units that meet the previously selected criteria are included, regardless of their locations. Normally, unit selection is limited to a specific geographic location. For example, one or more states can be selected by using the "State" option. The "One-Digit Zip Code" option can be used to select a group of states. For example, a first digit of three might select all units in Tennessee, Mississippi, Alabama, and Georgia. Use of a "Three-Digit Zip Code" limits the search to a region within a state. A closer search may be made by using a five-digit zip code and specifying the desired distance in miles around that zip code. The system permits the selection of any distance up to 250 miles.

Reports

After defining the set of units, the user is ready to produce a report. Users can produce the following five types of reports:

- Unit listing report
- Specialty report
- Corps report
- Unit report
- Graphics report.

Unit Listing Report

The basic report is the unit listing. It presents the following information for each unit:

- UIC
- Reserve Component
- Title
- City
- State
- Zip Code
- Number of Officers Assigned to Medical Positions
- Number of Warrant Officers Assigned to Medical Positions
- Number of Enlisted Personnel Assigned to Medical Positions.

The bottom row of the report shows a total for the officers, warrant officers, and enlisted personnel and the number of units. The other four types of reports are produced from the unit listing report.

Specialty Report

The specialty report shows the medical positions held by personnel assigned to the selected set of units. This information helps JMRTC estimate the number of potential students for C4 training in a specified geographical area. The report aggregates the number of people assigned to each type of medical specialty

(e.g., internist, orthopedic surgeon, operating room nurse, X-ray technician) using the occupational codes of each Service. The report can be produced for the entire set of selected units or for a specific unit within the selected set.

Corps Report

The specialty report displays the personnel in a set of units by specific medical specialty. The corps report aggregates the same information by corps (e.g., Medical Corps, Nurse Corps).

Unit Report

The unit report provides the following information on any unit included on a unit listing:

- Street Address
- City
- State
- Zip Code
- Phone Number
- Reserve Component
- Whether the unit is medical or nonmedical
- Number of personnel by corps.

Graphics Report

The graphics report, in color, superimposes a set of units on a map. This map increases the planner's understanding of where units are located by plotting them in relation to metropolitan areas and interstate highways. The following information is included on most maps:

- State borders (heavy red lines)
- Interstate highways (white lines)
- Three-digit zip code boundaries (dashed red lines)
- Army unit locations (green stars)

- Navy unit locations (white anchors)
- Air Force unit locations (blue airplanes).

The mapping software allows the user to manipulate the data graphically in the following ways:

- Enlarging or shrinking the map area
- Searching for a specific unit on a map
- Magnifying a portion of a map
- Printing the map.

The maps can cross state boundaries. For example, if the proper selection is made, the map will display units located in the Washington, D.C., metropolitan area covering the District of Columbia and the nearby counties in Virginia and Maryland.

The formats for the reports we have described in this chapter are shown in Appendix A, the users guide. That guide provides a detailed explanation and tutorial for using the system.

CHAPTER 3

FUTURE CHANGES

We installed the directory at the JMRTC in December 1989, and based on discussions with users there, we recommend the following directory enhancements:

- *Adding Army and Navy Individual Mobilization Augmentees (IMAs):* An IMA is a trained reservist assigned to a mobilization billet in an active unit. Currently, the directory includes the name, medical specialty, and home address of Air Force IMAs. That information enables JMRTC to contact Air Force IMAs who may reside within commuting distance of a planned C4 training site and invite them to attend the course. The directory should be expanded to also include Army and Navy IMAs.
- *Adding Home Addresses for National Army Augmentation Detachment Personnel:* The National Army Augmentation Detachment and the First Army Physician Management Branch were established several years ago by the USAR to recruit and administer physicians and nurses who did not live within commuting distance of a USAR unit. Members of these detachments attend training drills near their homes but are assigned to units located elsewhere. Currently, the directory includes them with the personnel of their units. The home addresses of these people should be added to the directory to enable the JMRTC to invite them to attend C4 training given near their homes.
- *Updating:* The directory should be updated at least annually and preferably semiannually to maintain its utility of the directory.

The installed directory was demonstrated to the Reserve Component Medical Council (RCMC) in January 1990 and at the Forces Command (FORSCOM) Medical Conference in March 1990. Based on discussions with participants at these conferences, we believe that the directory can be useful to other DoD organizations. For example, staffs involved in Joint mobilization planning for medical units should find it useful because it integrates the Selected Reserve units of all Services into a single automated data base. The directory would also be useful to Service staffs responsible for planning mobile training team visits to their own reserve medical units.

During these discussions, we received suggestions for modifying the directory to meet the needs of these potential users. We have examined the feasibility of making the following changes:

- *Adding Active Component Medical Units and Personnel:* Some potential users would like to have a single automated directory that integrates active and reserve medical units. A total force directory is feasible.
- *Including Primary Skill Code:* The directory currently identifies personnel in terms of their duty assignments rather than the primary skill held by the individual. For example, an internist assigned to a general surgeon's position is shown in the directory as a general surgeon. This method suits the needs of JMRTC planners because they are interested in the current mobilization assignments of the personnel to be trained. Other potential users of the directory are interested only in the primary qualifications of the personnel and some want to have information on both their duty assignments and their primary qualifications in order to identify skill mismatch problems. The directory can be expanded to add information on the primary skill of medical personnel.
- *Adding Capability to Select Units Containing Specific Medical Skills:* The current directory provides the user with the capability to select only those units that have personnel assigned to a specific corps (e.g., Medical Corps, Dental Corps, Nurse Corps, etc.). This capability is adequate for JMRTC. Other potential users have indicated an interest in being able to isolate units that have personnel with specific skills or groups of skills. For example, they may wish to identify all units that contain orthopedic surgeons or thoracic surgeons or units that have both nurse-anesthetists and operating room nurses. The directory can be modified to provide this capability.

APPENDIX A

USERS GUIDE

INTRODUCTION

This users guide contains information on using the querying, reporting, and mapping capabilities of the Unit Directory of Selected Reserve Medical Personnel. The basic version of the system, without geographic output, requires:

- An IBM-AT-compatible computer with 640K of main memory with MS-DOS Version 2.11 or greater.
- Six megabytes of disk storage space.
- A 80386-based machine is highly desirable.

Geographic display requires in addition:

- A graphics video adapter and monitor (EGA or VGA are highly desirable)
- Additional 12 megabytes of disk storage
- A license for MapInfo Run-Time Version 4.0 from MAPINFO Corporation, Troy, New York, including the MapPack Sampler.

For output of geographic displays, you will need a graphics printer or plotter. A list of display devices, printers, and plotters is shown in the Annex.

The basic version of the system is written in Clipper, Summer 1987 version, from Nantucket Corporation, Los Angeles, California. The geographic display portion is an application written in MapCode, the MapInfo Application Language.

SYSTEM OVERVIEW

The system contains information on all reserve units with personnel assigned to medical positions. Using the main selection screen shown in Figure A-1, you can query a data base of all units satisfying your selection criteria, and you can produce a report listing them. The example shows selection criteria for all units within 100 miles of the zip code 33602.

Unit Directory for Selected Reserve Medical Personnel
Assigned as of: AUG 1989

UNIT TYPE	COMPONENT	CORPS	BY ZIP RADIUS
<input checked="" type="checkbox"/> All Units <input type="checkbox"/> Medical <input type="checkbox"/> Non-Medical	<input checked="" type="checkbox"/> All Components <input type="checkbox"/> ARNG <input type="checkbox"/> USAR <input type="checkbox"/> AFR <input type="checkbox"/> ANG <input type="checkbox"/> NR <input type="checkbox"/> AFN Med IMAs	<input checked="" type="checkbox"/> All Personnel <input type="checkbox"/> Enlisted <input type="checkbox"/> Warrant Off <input type="checkbox"/> All Officers <input type="checkbox"/> Medical Corps <input type="checkbox"/> Nurse Corps <input type="checkbox"/> Med Spec'list <input type="checkbox"/> Dental Corps <input type="checkbox"/> Med Services <input type="checkbox"/> Veterinary <input type="checkbox"/> Bio-Med Sci	<input type="checkbox"/> Zip Code 33602 <input type="checkbox"/> Radius 100 (up to 250 mi) <ESC> to cancel

Press <4-Enter> to accept data entered in field

FIG. A-1. SELECTION CRITERIA SCREEN

Once selection criteria are specified using this screen, the software can select and list the qualified units. The report produced on the screen, shown in Figure A-2, can be sorted in various orders and produced as hard copy. The data can also be superimposed on a map and examined geographically by selecting the mapping option shown in Figure A-3.

Unit Directory for Selected Reserve Medical Personnel									
Assigned as of: AUG 1989									
<F1> Help with keys									
UIC	Comp Name	City		ST	Zip	Off	War	Enl	
FFLST	AFR	0037	AEROMED EVAC	TAMPA	FL 33608	54	0	150	
IFL39	IMA	AFN	MED IMAS-LAKELAND	LAKELAND	FL 33801	1	0	0	
N20968	NR	USS	ESTOCIN FFG-15	MIAMI	FL 34091	0	0	1	
N20974	NR	USS	FLATLEY FFG-21	MIAMI	FL 34090	0	0	1	
N20975	NR	FFG	22 FAHRION	MIAMI	FL 34091	0	0	1	
N54067	NR	USS	BLAKELY FF-1072	MIAMI	FL 34090	1	0	0	
N81370	NR	NR	PERSMOTH 3308	ORLANDO	FL 32803	1	0	1	
N82779	NR	PH	COMZ 14 DET P0070A	TAMPA	FL 33602	1	0	0	
N82911	NR	S1	THOMAS S GATES 5108	Orlando	FL 32803	1	0	0	
N85101	NR	RNMCD	14 DET 0314	ORLANDO	FL 32803	0	0	4	
N85103	NR	RNMCD	14 DET 0414	TAMPA	FL 33602	0	0	1	
N85143	NR	RNMCD	14 DET 1314	ST PETERSBURG	FL 33701	2	0	2	
N85795	NR	NR	SIMA MAYPT 708	ST PETERSBURG	FL 33701	0	0	1	
N86223	NR	NR	CONSUBGRU 8 DET 208	ORLANDO	FL 32803	1	0	0	
N87208	NR	NR	NAUSTA PANAMA PSU 0 2	MIAMI	FL 34061	1	0	2	
N87344	NR	NR	NAUSTA NORVA 308	ORLANDO	FL 32803	0	0	1	
N87666	NR	NR	MOBASCONTGRP 0809	ORLANDO	FL 32803	0	0	3	
N88307	NR	NR	PH 500 COMZ 14 DET I	ST PETERSBURG	FL 33701	13	0	34	
N88310	NR	NR	NH ORLANDO 100	ORLANDO	FL 32803	13	0	5	
Unit 1 of 49						Total for all 49 units: 367			
						6 1021			

FIG. A-2. REPORT PRODUCED FROM SELECTION CRITERIA IN
FIGURE A-1

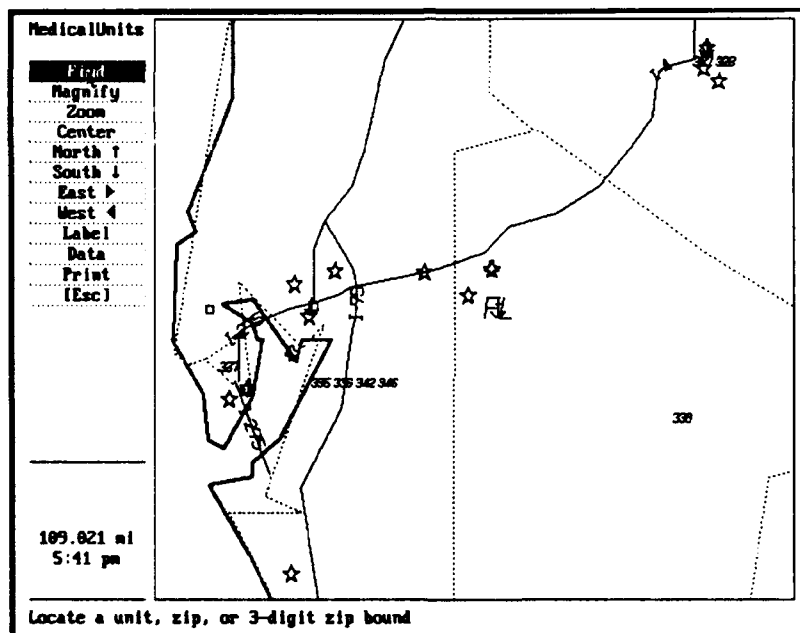


FIG. A-3. MAP FROM REPORT IN FIGURE A-2

TUTORIAL

Lesson 1: Navigating Within "Unit Type" Selection Criteria

Suppose you wish to generate a list of units in Maine, Vermont, and New Hampshire that have medical officers. Begin by invoking the system from the DOS prompt:

main ←

The system will then display the screen shown in Figure A-4 which allows you to enter selection criteria for the report you wish to produce.

The initial screen displays the title "Unit Directory for Selected Reserve Medical Personnel" and the date "Assigned as of: AUG 1989". It features four main selection boxes: "UNIT TYPE" (with "All Units" highlighted), "COMPONENT", "CORPS", and "LOCATION". A "VALID KEYS" section at the bottom explains the navigation controls.

UNIT TYPE	COMPONENT	CORPS	LOCATION
All Units	All Components	All Personnel	All Locations
Medical	ARMG	Enlisted	By State
Non-Medical	USAR	Warrant Off	By 1-Dig Zip
	AFR	All Officers	By 3-Dig Zip
	AMG	Medical Corps	By Zip Radius
	NR	Nurse Corps	
	AFR Med IMAs	Med Spec'list	
		Dental Corps	
		Med Services	
		Veterinary	
		Bio-Med Sci	

VALID KEYS	
<Enter>	Turn item on or off
↑, ↓	Move up, down list
*, *	Move to next list
<F9>	Generate report
<F10>	Exit system
<F3>	Turn all list items off

FIG. A-4. INITIAL SCREEN

On a color monitor, the box on the left of the screen ("Unit Type") will be highlighted in yellow. It lets you select whether you want to look at just medical units ("Medical"), just nonmedical ("Nonmedical") or both medical and nonmedical units ("All Units"). Note also that your current selection, "All Units," is highlighted. Experiment with the up and down arrow keys to change the highlighted option. Hit the "Home" and "End" keys and note how you move to the first and last highlighted option.

Now, we are going to select "All Units" as follows:

- Hit the "Home" key to move to the first option, "All Units."
- Hit "Enter" and note that a checkmark appears by "All Units" (see Figure A-5). The checkmark means that of the three choices available in the "Unit Type" category, "All Units" was selected.

Unit Directory for Selected Reserve Medical Personnel
Assigned as of: AUG 1989

UNIT TYPE	COMPONENT	CORPS	LOCATION
<input checked="" type="checkbox"/> All Units	<input checked="" type="checkbox"/> All Components	<input checked="" type="checkbox"/> All Personnel	<input checked="" type="checkbox"/> All Locations
<input type="checkbox"/> Medical	ARMG	Enlisted	By State
<input type="checkbox"/> Non-Medical	USAR	Warrant Off	By 1-Dig Zip
	AFR	All Officers	By 3-Dig Zip
	ANG	Medical Corps	By Zip Radius
	MA	Nurse Corps	
	AFR Med IMAs	Med Spec'list	
		Dental Corps	
		Med Services	
		Veterinary	
		Bio-Med Sci	

VALID KEYS	
<Enter>	Turn item on or off
↑, ↓	Move ↑, down list
←, →	Move to next list
<F9>	Generate report
<F10>	Exit system
<F3>	Turn all list items off

FIG. A-5. SELECTION SCREEN WITH "ALL UNITS" SELECTED

Lesson 2: Navigating Between Selection Criteria Boxes

You cannot yet generate a report because you must select criteria for each of the boxes on the screen. Move now to the "Component" box by pressing the right arrow key. Now the "Unit Type" box is no longer highlighted (white) and the "Component" box is highlighted in yellow. As with the "Unit Type" box, you can move up and down the various criteria with the up and down arrow keys. Now, do the following:

- Position the cursor to the "All Components" option with the up arrow or "Home" key.
- Hit "Enter" so that a checkmark appears beside "All Components."
- Move to the "Corps" box with the right arrow key.
- Select the "Medical Corps" option criterion by hitting the down arrow four times, and hit "Enter" to put a checkmark beside "Medical Corps."

Your screen should now look like Figure A-6. Experiment with the right and left arrow keys to see how to move between the boxes. Notice that as you move, your selections are maintained. If you move into the "Location" box, you will not be able to leave until you have specified a location. (If this happens move on to Lesson 3.) You now only need to specify "Location" and you are ready to produce a report.

Unit Directory for Selected Reserve Medical Personnel
Assigned as of: AUG 1989

UNIT TYPE <input checked="" type="checkbox"/> All Units Medical Non-Medical	COMPONENT <input checked="" type="checkbox"/> All Components ARNG USAR AFR ANG NA AFR Med INAs	CORPS <input checked="" type="checkbox"/> All Personnel Enlisted Warrant Off All Officers Medical Corps Nurse Corps Med Spec'list Dental Corps Med Services Veterinary Bio-Med Sci	LOCATION All Locations By State By 1-Dig Zip By 3-Dig Zip By Zip Radius
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VALID KEYS

<←Enter>	Turn item on or off
↑, ↓	Move up, down list
←, →	Move to next list
<F9>	Generate report
<F10>	Exit system
<F3>	Turn all list items off

FIG. A-6. ALL SELECTION CRITERIA SPECIFIED EXCEPT LOCATION

Lesson 3: Selecting a Location

We will now specify that we wish to see only the units in Maine, New Hampshire, and Vermont:

- Hit the right arrow key until you are in the "Location" box.
- Hit the down arrow key to select "By State."
- Hit "Enter" and a list of states replaces the "Location" box.

Your screen should now look like Figure A-7. The list of states operates much like the other box selection criteria except that it is longer. Experiment now with the arrow keys and the "PgUp," "PgDn," "Home," and "End" keys to scroll through the list of states. Once you are comfortable with scrolling, proceed:

- Position to "ME Maine" in the list and hit "Enter."

Unit Directory for Selected Reserve Medical Personnel			
Assigned as of: AUG 1989			
UNIT TYPE	COMPONENT	CORPS	BY STATE
<input checked="" type="checkbox"/> All Units	<input checked="" type="checkbox"/> All Components	<input checked="" type="checkbox"/> All Personnel	LA LOUISIANA
Medical	ARMG	Enlisted	MA MASSACHUSE
Non-Medical	USAR	Warrant Off	MD MARYLAND
	AFR	All Officers	ME MAINE
	ANG	Medical Corps	MI MICHIGAN
	NR	Nurse Corps	MN MINNESOTA
	AFR Med IMAs	Med Spec'list	MO MISSOURI
		Dental Corps	MS MISSISSIPP
		Med Services	MT MONTANA
		Veterinary	NC N. CAROLIN
		Bio-Med Sci	ND N. DAKOTA
			NE NEBRASKA
			NH NEW HAMPSH
			NJ NEW JERSEY
			NM NEW MEXICO
			NV NEVADA
			NY NEW YORK
			OH OHIO
			OK OKLAHOMA
			OR OREGON
			<ESC> to cancel

VALID KEYS	
<Enter>	Turn item on or off
↑, ↓	Move up, down list
←, →	Move to next list
<F9>	Generate report
<F10>	Exit system
<F2>, <F3>	Turn all list items on, off

FIG. A-7. SELECTION FROM STATE LIST

Notice that as you hit "Enter," the entry for "ME Maine" disappears (it has moved to the top of the list with a checkmark) and you are now positioned at the next state in the alphabet after Maine, "MI Michigan." In the location menus that take up more than one screen (state and three-digit zip code), the selected items are always shown at the top of the list.

Now move to the entries for New Hampshire and Vermont and select them. Then hit "Home" and your screen should look like Figure A-8. If you accidentally make an incorrect selection (say you accidentally selected Michigan instead of Maine), you can turn the selection off by moving to the selected item and hitting "Enter." In other words, hitting "Enter" checks a selection that is not checked and "unchecks" a selection that is checked.

Unit Directory for Selected Reserve Medical Personnel
Assigned as of: AUG 1989

UNIT TYPE <input checked="" type="checkbox"/> All Units <input type="checkbox"/> Medical <input type="checkbox"/> Non-Medical	COMPONENT <input checked="" type="checkbox"/> All Components ANM USAR AFR ANG MA AFR Med IMAs	CORPS <input checked="" type="checkbox"/> All Personnel Enlisted Warrant Off All Officers Medical Corps Nurse Corps Med Spec'list Dental Corps Med Services Veterinary Bio-Med Sci	BY STATE <input checked="" type="checkbox"/> ME MAINE <input checked="" type="checkbox"/> NH NEW HAMPSH <input checked="" type="checkbox"/> VT VERMONT AK ALASKA AL ALABAMA AR ARKANSAS AZ ARIZONA CA CALIFORNIA CO COLORADO CT CONNECTICU DC DIST. COLU DE DELAWARE FL FLORIDA GA GEORGIA GU GUAM HI HAWAII IA IOWA ID IDAHO IL ILLINOIS IN INDIANA (ESC) to cancel
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VALID KEYS

<4>-Enter	Turn item on or off
↑, ↓	Move up, down list
←, →	Move to next list
<F9>	Generate report
<F10>	Exit system
<F2>, <F3>	Turn all list items on, off

**FIG. A-8. SELECTION SCREEN WITH MAINE, NEW HAMPSHIRE,
AND VERMONT SELECTED**

Since you now have selected criteria for all the boxes, you can now generate the report. Note that the "Valid Keys" box at the bottom shows the keys you can hit to produce various results. Now hit the "F9" key to generate the report. Figure A-9 shows the resulting report.

Unit Directory for Selected Reserve Medical Personnel							
Assigned as of: AUG 1989							
<F1> Help with keys							
UIC	Comp Name	City	ST	Zip	Off	War	Enl
P2K0	ANG 0101 USAF CLINIC	SO PORTLAND	ME	04106	2	0	5
PFL71	ANG MAINE ANG HQ	AUGUSTA	ME	04333	1	0	0
PFL77	ANG 0101 USAF CLINIC	BANGOR	ME	04401	15	0	32
PYND6	ANG 0157 USAF CLINIC	PEASE AFB	NH	03801	12	0	37
PYMQM	ANG VERMONT ANG HQ	WINDSOR	VT	05404	1	0	0
PYMQV	ANG 0158 TACTICAL CLINIC	BURLINGTON	VT	05401	10	0	23
IME1	INA AFR MED INAS-ALFRED	ALFRED	ME	04002	1	0	0
IME10	INA AFR MED INAS-PRESQUE ISL	PRESQUE ISLE	ME	04769	0	0	2
IME11	INA AFR MED INAS-S BERNICK	S BERNICK	ME	03908	1	0	0
IME12	INA AFR MED INAS-WEST KENNED	WEST KENNEDUNK	ME	04094	1	0	0
IME2	INA AFR MED INAS-AUGUSTA	AUGUSTA	ME	04330	0	0	1
IME3	INA AFR MED INAS-BRUNSWICK	BRUNSWICK	ME	04011	1	0	0
IME4	INA AFR MED INAS-CAPE ELIZAB	CAPE ELIZABETH	ME	04107	2	0	0
IME5	INA AFR MED INAS-CARIBOU	CARIBOU	ME	04736	1	0	0
IME6	INA AFR MED INAS-KENNEDUNKPO	KENNEDUNKPORT	ME	04046	1	0	0
IME7	INA AFR MED INAS-LORING AFB	LORING AFB	ME	04751	1	0	0
IME8	INA AFR MED INAS-M WINDHAM	M WINDHAM	ME	04062	1	0	0
IME9	INA AFR MED INAS-NORTH ANSON	NORTH ANSON	ME	04958	1	0	0
IME1	INA AFR MED INAS-CLAREMONT	CLAREMONT	NH	03743	1	0	0
Unit 1 of 86					Total for all 86 units: 353		
					9 691		

**FIG. A-9. SAMPLE REPORT FOR MAINE, NEW HAMPSHIRE, AND
VERMONT**

Lesson 4: Report Options

From the report screen shown in Figure A-9, you can browse through the list of items using the following keys:

- Down and up arrows move through the items one at a time.
- Right and left arrows move across the fields of the report.
- "PgUp" and "PgDn" move up and down one page at a time.
- "Ctrl-PgUp" and "Ctrl-PgDn" move to the first or last record of the report.
- Enter brings up a display of details on the current item.
- "F1" brings up a list of other options.

Now hit "F1" for the list of report options available. You will see the screen in Figure A-10 which lists the available keys. These options are described in subsequent sections. Hit any key to return to the report.

Unit Directory for Selected Reserve Medical Personnel									
Assigned as of: AUG 1989									
<F1> Help with keys									
UIC	Comp Name		City	ST	Zip	Off	War	Enl	
FF2K8	ANG	0101 USAF CLINIC	SO PORTLAND	ME	04106	2	0	5	
FFL71	ANG	MAINE ANG	HQ AUGUSTA	ME	04333	1	0	0	
FFL77	ANG	0101 USAF CLINIC	BANGOR	ME	04401	15	0	32	
FFND6	ANG	0157 USAF CLINIC	PEASE AFB	NH	03801	12	0	37	
FFNQ8	ANG	VERMONT ANG	HQ WINDSOR	VT	05404	1	0	0	
FFNQV	ANG	0158 TACTICAL CLINIC	BURLINGTON	VT	05401	10	0	23	
INE	Valid keys for viewing and moving through report					4002	1	0	0
INE	1, 1	Move up, down one row				4769	0	0	2
INE	<4>Enter	Display unit detail				3908	1	0	0
INE	<F4>	Sort database				4094	1	0	0
INE	<F5>	Print database				4330	0	0	1
INE	<F6>	Gateway to MapInfo				4011	1	0	0
INE	<F7>	Corps totals for all units selected				4107	2	0	0
INE	<F8>	Specialties for all units selected				4736	1	0	0
INE	<Ctl><PgUp><PgDn>	Move to top, bottom of report				4046	1	0	0
INE	<ESC>	Return to selection screen				4751	1	0	0
INE	<F10>	Exit from system				4062	1	0	0
INE						4958	1	0	0
INH	Please press any key to return to report					3743	1	0	0
Unit 1 of 86		Total for all 86 units:				353	9	691	

FIG. A-10. REPORT OPTIONS

Now, from the report in Figure A-9 for Maine, New Hampshire, and Vermont, produce a detail popup for the unit whose unit identification code (UIC) is FF2K8.

- Position the cursor to the record for FF2K8 (the first unit shown) using the arrow keys .
- Hit "Enter" to show the popup shown in Figure A-11.
- Hit any key to return to the report.

Unit Directory for Selected Reserve Medical Personnel									
Assigned as of: AUG 1989									
<F1> Help with keys									
UIC	Comp Name		City	ST	Zip	Off	War	Enl	
FF2K8	ANG	0101 USAF CLINIC	SD PORTLAND	ME	04106	2	0	5	
FFL71	ANG	MAINE ANG HQ	AUGUSTA	ME	04333	1	0	0	
FFL77	ANG	0101 USAF CLINIC	BANGOR	ME	04401	15	0	32	
FFHD6	ANG	0157 USAF CLINIC	PEASE AFB	NH	03801	12	0	37	
FFHQH	ANG	VERMONT ANG HQ	WINDSOR	VT	05404	1	0	0	
FFHQV	ANG	0158 TACTICAL CLINIC	BURLINGTON	VT	05401	10	0	23	
IME1	IMA	AFB MED INAS-ALFRED	ALFRED	ME	04002	1	0	0	
IME10	IMA	AFB MED INAS-PRESQUE ISL	PRESQUE ISLE	ME	04769	0	0	2	
IME	Detail for Unit FF2K8								
IME	0101 USAF CLINIC	CI	Comp: ANG	Med Unit?: Y					
IME	< No local address available >								
IME	SD PORTLAND	AGS, ME, 04106							
IME	() -								
IME									
IME	Officers:	2	Medical:	2	Med Services:	0			
IME	Warrant Off:	0	Nurse:	0	Med Specialists:	0			
IME	Enlisted:	5	Dental:	0	Bio-Med Sci:	0			
IME					Veterinarians:	0			
IME	Please press any key to return to report								
Unit 1 of 86					Total for all 86 units: 353 9 691				

FIG. A-11. REPORT DETAIL POPUP

Lesson 5: Sorting and Printing a Report

As shown in Figure A-10, you can sort the report by hitting "F4." If you have the "Valid Keys" screen showing, hit any key to make it disappear. Now sort the output by state and zip code as follows:

- Hit "F4" to make the sort popup appear (Figure A-12).
- Hit the down arrow key until the "State, Zip Code" item is highlighted.
- Hit "Enter" and the report will be sorted by state and zip code.

Unit Directory for Selected Reserve Medical Personnel									
Assigned as of: AUG 1989									
<F1> Help with keys									
UIC	Comp Name	City		ST	Zip	Off	War	Enl	
FF2XB	ANG 0101 USAF CLINIC	SO PORTLAND		NE	04106	2	0	5	
FFL71	SORT BY...	HQ		NE	04333	1	0	0	
FFL77	UIC	CLINIC		NE	04101	15	0	32	
FFMD6	Component	CLINIC		NH	03801	12	0	37	
FFMQM	State, City	ANG	HQ	VT	05404	1	0	0	
FFMQU	State, Zip	TICAL CLINIC		VT	05401	10	0	23	
IME1	Officers	IMAS-ALFRED		NE	04002	1	0	0	
IME10	Warrant Off	IMAS-PRESQUE ISL		NE	04769	0	0	2	
IME11	Enlisted	IMAS-S BERNICK		NE	03908	1	0	0	
IME12		IMAS-WEST KENNED		NE	04094	1	0	0	
IME2	IMA	AFR MED	IMAS-AUGUSTA	NE	04330	0	0	1	
IME3	IMA	AFR MED	IMAS-BRUNSWICK	NE	04011	1	0	0	
IME4	IMA	AFR MED	IMAS-CAPE ELIZAB	NE	04107	2	0	0	
IME5	IMA	AFR MED	IMAS-CARIBOU	NE	04736	1	0	0	
IME6	IMA	AFR MED	IMAS-KENNEBUNKPO	NE	04046	1	0	0	
IME7	IMA	AFR MED	IMAS-LORING AFB	NE	04751	1	0	0	
IME8	IMA	AFR MED	IMAS-N WINDHAM	NE	04062	1	0	0	
IME9	IMA	AFR MED	IMAS-NORTH ANSON	NE	04950	1	0	0	
INH1	IMA	AFR MED	IMAS-CLAREMONT	NH	03743	1	0	0	
Unit 1 of 86						Total for all 86 units: 353 9 691			

FIG. A-12. SORT POPUP

To print a report, the printer should be on and connected to the personal computer (PC). The currently displayed report can be printed by hitting "F5."

Lesson 6: Exiting the Report and Producing a New One by Three-Digit Zip Code

To exit the report, hit the "Esc" (escape) key. This will produce a popup as shown in Figure A-13. If you wish to exit the report and return to the selection process, hit "Enter" for "Exit for System." Otherwise, you could hit the down arrow key to choose "Return to System" and you would return to the report display process. At this point, you change your selection criteria to produce another report.

Unit Directory for Selected Reserve Medical Personnel									
Assigned as of: AUG 1989									
<F1> Help with keys									
UIC	Comp Name	City		ST	Zip	Off	War	Enl	
FF2X8	ANG 0101 USAF CLINIC	SO PORTLAND		ME	04106	2	0	5	
FFL71		HQ	AUGUSTA	ME	04333	1	0	0	
FFL77	Exit from report	NIC	BANGOR	ME	04401	15	0	32	
FFND6	Continue report	NIC	PEASE AFB	NH	03801	12	0	37	
FFMQM		HQ	WINDOOSKI	VT	05404	1	0	0	
FFNQV	ANG 0150 TACTICAL CLINIC	BURLINGTON		VT	05401	10	0	23	
IME1	IMA AFR MED IMAS-ALFRED	ALFRED		ME	04002	1	0	0	
IME10	IMA AFR MED IMAS-PRESQUE ISL	PRESQUE ISLE		ME	04769	0	0	2	
IME11	IMA AFR MED IMAS-S BERNICK	S BERNICK		ME	03908	1	0	6	
IME12	IMA AFR MED IMAS-WEST KENNED	WEST KENNEDUNK		ME	04094	1	0	0	
IME2	IMA AFR MED IMAS-AUGUSTA	AUGUSTA		ME	04330	0	0	1	
IME3	IMA AFR MED IMAS-BRUNSWICK	BRUNSWICK		ME	04011	1	0	0	
IME4	IMA AFR MED IMAS-CAPE ELIZAB	CAPE ELIZABETH		ME	04107	2	0	0	
IME5	IMA AFR MED IMAS-CARIBOU	CARIBOU		ME	04736	1	0	0	
IME6	IMA AFR MED IMAS-KENNEDUNKPO	KENNEDUNKPORT		ME	04046	1	0	0	
IME7	IMA AFR MED IMAS-LORING AFB	LORING AFB		ME	04751	1	0	0	
IME8	IMA AFR MED IMAS-N WINDHAM	N WINDHAM		ME	04062	1	0	0	
IME9	IMA AFR MED IMAS-NORTH ANSON	NORTH ANSON		ME	04958	1	0	0	
IMH1	IMA AFR MED IMAS-CLAREMONT	CLAREMONT		NH	03743	1	0	0	
Unit 1 of 86						Total for all 86 units: 353			
						9 691			

FIG. A-13. POPUP FOR EXITING THE REPORT

Move to the "State" box and hit "Esc." This will restore the main "Location" box. Move to "By 3-Dig Zip" and hit "Enter." Then select three-digit zip codes 040 and 041 by moving in the window with the cursor keys and hit "Enter." Hit the "Home" key when you are finished and notice that the two three-digit zip codes you have selected have moved to the top of the list. You can change these selections by positioning on them and hitting return. Experiment with the process of making and changing the selection.

After you have selected 040 and 041, hit "F9" to produce the report.

Lesson 7: Exiting the System

You can exit the system from either the report display or the selection process by hitting "F10." That produces the screen shown in Figure A-14. You can then return to processing by hitting the down arrow and enter, or you can exit by simply hitting "Enter."

Unit Directory for Selected Reserve Medical Personnel									
Assigned as of: AUG 1989									
<F1> Help with keys									
UIC	Comp Name		City	ST Zip	Off	War	Enl		
PF2K8	ANG	0101 USAF CLINIC	SD PORTLAND	NE 04106	2	0	5		
PFL71			HQ AUGUSTA	NE 04333	1	0	0		
PFL77		Exit from system	NIC BANGOR	NE 04401	15	0	32		
PFND6		Return to system	NIC PEASE AFB	NH 03801	12	0	37		
PFNM4			HQ WINDSOR	VT 05404	1	0	0		
PFNVU	ANG	0158 TACTICAL CLINIC	BURLINGTON	VT 05401	10	0	23		
INE1	IMA	AFB MED INAS-ALFRED	ALFRED	NE 04002	1	0	0		
INE10	IMA	AFB MED INAS-PRESQUE ISL	PRESQUE ISLE	NE 04769	0	0	2		
INE11	IMA	AFB MED INAS-S BERNICK	S BERNICK	NE 03908	1	0	0		
INE12	IMA	AFB MED INAS-WEST KENNED	WEST KENNEDBUNK	NE 04094	1	0	0		
INE2	IMA	AFB MED INAS-AUGUSTA	AUGUSTA	NE 04330	0	0	1		
INE3	IMA	AFB MED INAS-BRUNSWICK	BRUNSWICK	NE 04011	1	0	0		
INE4	IMA	AFB MED INAS-CAPE ELIZAB	CAPE ELIZABETH	NE 04107	2	0	0		
INE5	IMA	AFB MED INAS-CARIBOU	CARIBOU	NE 04736	1	0	0		
INE6	IMA	AFB MED INAS-KENNEDBUNKPO	KENNEDBUNKPORT	NE 04046	1	0	0		
INE7	IMA	AFB MED INAS-LORING AFB	LORING AFB	NE 04751	1	0	0		
INE8	IMA	AFB MED INAS-N WINDHAM	N WINDHAM	NE 04062	1	0	0		
INE9	IMA	AFB MED INAS-NORTH ANSON	NORTH ANSON	NE 04958	1	0	0		
INH1	IMA	AFB MED INAS-CLAREMONT	CLAREMONT	NH 03743	1	0	0		
Unit 1 of 86					Total for all 86 units: 353 91 691				

FIG. A-14. POPUP FOR EXITING THE SYSTEM

Lesson 8: Selecting by Zip Code and Radius

You can limit the set of units available for selection to a given radius around a zip code. Suppose you want to know all the units within 150 miles of St. Paul, Minnesota. (zip code 55117). Re-enter the system and select "All Units," "All Components," and "All Corps" following the procedures that you learned in Lessons 1 and 2. Then move to the "Location" box and select "By Zip Radius." You should see a screen like the one shown in Figure A-15.

- Type the zip code "55117" and hit "Enter." While this is a valid zip code, there are no units at that zip code so the system does not recognize it. Note the message at the bottom of the screen:

"Invalid zip code; 55113 and 55155 are nearby"

Those zip codes are the two closest ones (in sequence) to "55117."

- Type "55113" (which you learned from the message at the bottom of the screen) and hit "Enter."
- Type "150" and hit "Enter."
- Hit "F9" to produce the report.

Unit Directory for Selected Reserve Medical Personnel
Assigned as of: AUG 1989

UNIT TYPE <input checked="" type="checkbox"/> All Units <input type="checkbox"/> Medical <input type="checkbox"/> Non-Medical	COMPONENT <input checked="" type="checkbox"/> All Components <input type="checkbox"/> ARNG <input type="checkbox"/> USAR <input type="checkbox"/> AFR <input type="checkbox"/> ANG <input type="checkbox"/> NR <input type="checkbox"/> AFR Med IMAs	CORPS <input checked="" type="checkbox"/> All Personnel <input type="checkbox"/> Enlisted <input type="checkbox"/> Warrant Off <input type="checkbox"/> All Officers <input type="checkbox"/> Medical Corps <input type="checkbox"/> Nurse Corps <input type="checkbox"/> Med Spec'list <input type="checkbox"/> Dental Corps <input type="checkbox"/> Med Services <input type="checkbox"/> Veterinary <input type="checkbox"/> Bio-Med Sci	BY ZIP RADIUS Zip Code <input type="text"/> Radius <input type="text"/> (up to 250 mi) (ESC) to cancel
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Press <4-Enter> to accept data entered in field

FIG. A-15. ZIP-RADIUS SELECTION SCREEN

Lesson 9: Limiting Units by Other Than Location

The "Unit Type," "Component," and "Corps" selection criteria allow you to limit the types of units you wish to include in a selection. You can select one or more criteria by moving to the appropriate box, highlighting the item, and hitting "Enter." You can change any selection that has been chosen by highlighting the item and hitting "Enter."

The "All..." selection items are mutually exclusive with others. For example, if you have any corps selected and you select "All Personnel," then the individual corps selection will be changed as you select "All Personnel." You should experiment with the selection criteria to determine the impact of selecting each item.

Lesson 10: Producing a Specialty Report

The specialty report lists all officer, warrant officer, and enlisted specialties that exist in a single unit or group of units. The report shows the specialty code, title, and number of people assigned to each specialty (see Figure A-16).

Unit Directory for Selected Reserve Medical Personnel		
Assigned as of: AUG 1989		
Speciality	Title	count
09256	Optometrist	1
09291	Environmental Health Officer	1
09326	General Practice Physician	1
09356	Aerospace Medicine Physician	5
09716	Nursing Administrator	1
09756	Clinical Nurse	2
09826	Dental Officer	2
90170	Aeronautical Specialist	2
90250	Medical Service Specialist	8
90270	Medical Service Specialist	3
90299	Medical Service Specialist	1
90350	Radiologic Specialist	1
90370	Radiologic Specialist	1
90570	Pharmacy Specialist	1
90650	Medical Administrative Specialist	2
90670	Medical Administrative Specialist	2
90770	Bioenvironmental Engineering Specia	2
91570	Medical Materiel Specialist	2
91870	Bionomedical Equipment Specialist	1
92470	Medical Laboratory Specialist	1

Rpt Totals

Army

Officers: 32

Enlisted: 137

Navy

Officers: 7

Enlisted: 10

Air Force

Officers: 26

Enlisted: 33

Tot Officer: 65

Tot Enlistd: 180

Grand Total: 245

FIG. A-16. SPECIALTY REPORT

To produce this report for a group of units — for example, the group produced in Lesson 8 — press the “F8” key. To generate this report for a specific unit, position the cursor to the desired unit and press “Enter.” A popup summary for that unit appears (see Figure A-11). Press the “Enter” key again. A window appears; select “Specialty Report” and press “Enter.”

To exit from the specialty report, press the “Esc” key.

Lesson 11: Gateway to MapInfo

Now reproduce the report in Lessons 1 through 4 for Maine, New Hampshire, and Vermont and hit “F6” to enter MapInfo. As it begins, MapInfo will first align the map to the set of points you have selected. As it does so, the screen shown in Figure A-17 will be displayed. If a large number of units is included in the report, this step may take a long time.

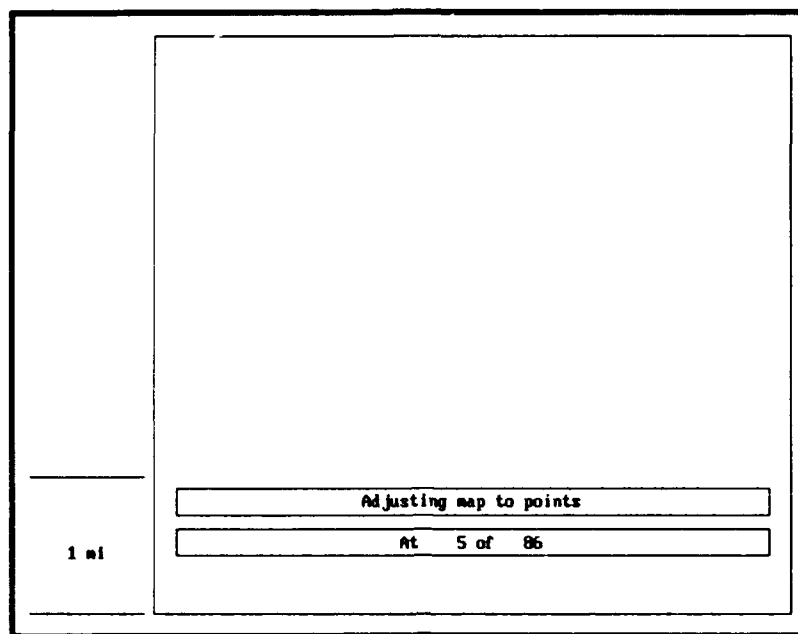


FIG. A-17. MAPINFO INITIALIZATION SCREEN

Once this step is complete, the screen should show a map that is scaled to the points that you have selected in your report as shown in Figure A-18. The key to this display is as follows:

- Red lines are state boundaries.
- Dotted red lines are three-digit zip code boundaries (those lines are labeled in italics).
- White lines with labels are interstate highways.
- Light blue squares are major cities (these cities may or may not be labeled depending on whether enough space is available).
- Light green stars represent locations with one or more Army units.
- White anchors represent locations with one or more Navy units.
- Blue jets represent locations with one or more Air Force units.

Note that stars, anchors, and jets may be displayed at the same point.

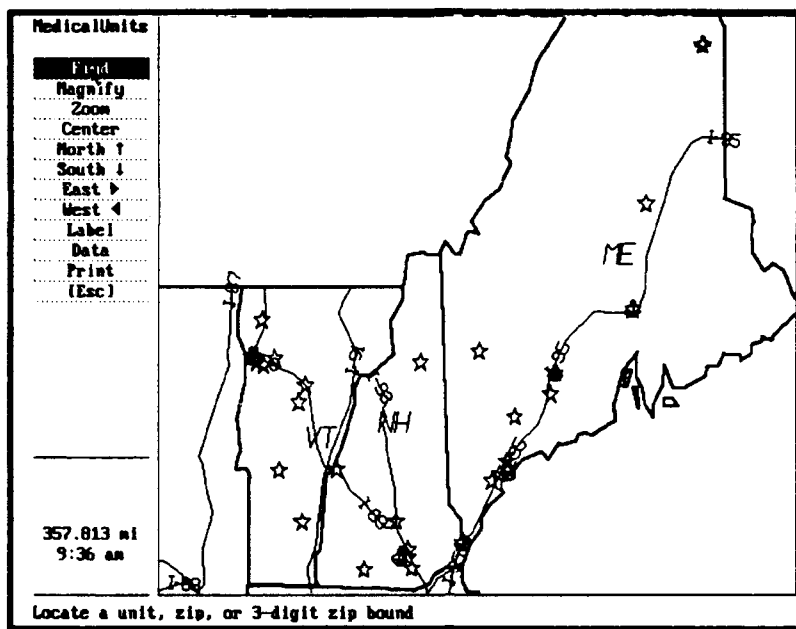


FIG. A-18. MAP OF UNITS IN MAINE, NEW HAMPSHIRE, AND VERMONT

Lesson 12: Navigating MapInfo Menus

The screen shown in Figure A-18 contains the options for the main menu of the mapping portion of the system. Note the arrow cursor pointing to the first item, "Find," which is in reverse video. The down and up arrow keys change the currently selected item. The text in the lower left corner of the screen ("Locate a unit, zip, or three-digit zip boundary") describes the function of the currently selected option. Move through the selected items by hitting the up and down arrow keys and notice how the text changes. (If you move past the last item, hit the up arrow key to return to the menu.)

When working with the main menu, you can select the currently highlighted item by hitting return. Move the cursor to the item "North" and hit return and the map will move one-half screen to the north; do the same with "South," "East," and "West." This process should leave the map where it was when you started. Note that as you panned to the surrounding area, there were no units (stars, anchors, and jets). This is because the map only shows the units that you selected in your report.

Lesson 13: Finding a Unit

The "Find" option of the main menu allows you to locate points on the map by certain attributes (unit identifier, zip code, or three-digit zip code boundary). Move

the main menu pointer to select "Find" and hit "Enter." A new menu will now appear in the upper left corner as shown in Figure A-19. This menu operates like the main menu. You can move it up and down to highlight an item and select with the "Enter" key.

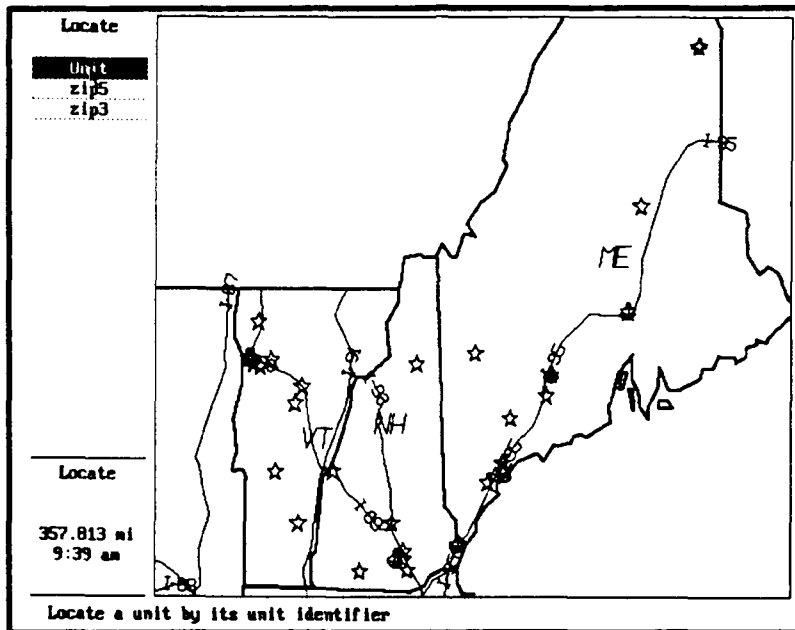


FIG. A-19. FIND MENU

Now select the "Unit" options and a popup will appear as shown in Figure A-20. Type "0157 USAF Clinic" and hit "Enter." A large arrow points to that unit as shown in Figure A-21. If the UIC does not exactly match the name of a unit that has been selected, a list of close matches appears on the screen. You can select one from the list by highlighting it and hitting "Enter."

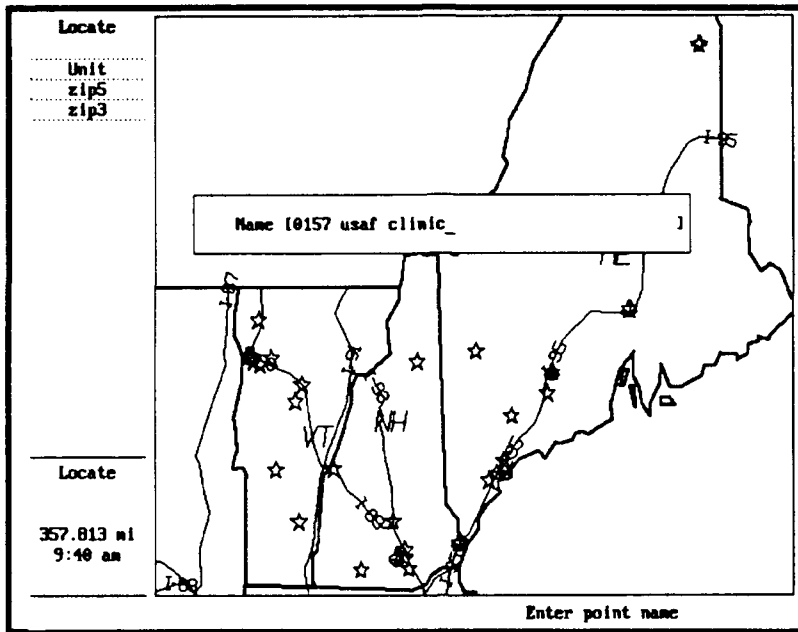


FIG. A-20. POPUP FOR FINDING A UNIT

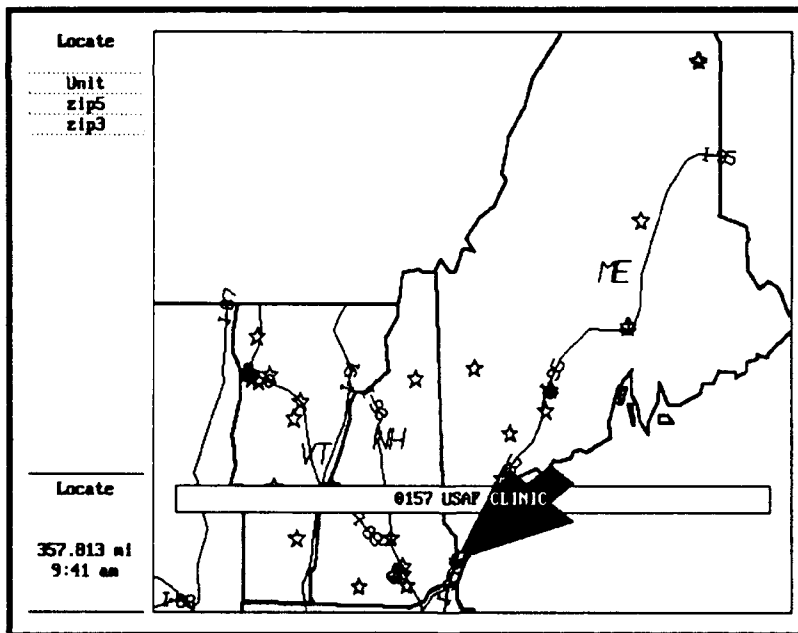


FIG. A-21. ARROW SHOWING UNIT LOCATION

Finding a three- or five-digit zip code uses the same approach: select the "Zip3" or "Zip5" option and type in the zip you wish to find.

Lesson 14: Labeling Units

Now you will see cross hairs pointing to the center of the map. You can move those cross hairs to any point on the map with the cursor keys. Move the cross hairs to one of the unit points on the screen and hit "Enter." At this point, one of three results can occur:¹

- If only one unit exists at the point and MapInfo can find room to put its label, the label will appear on the map.
- If only one unit exists and MapInfo cannot find room to put its label, the label will not appear on the map and MapInfo will issue a message.
- If more than one unit exists at the point, a popup will appear showing the list of units from which you can select the one to label. If there is not enough room for the label, the label will not appear on the map and MapInfo will issue a message.

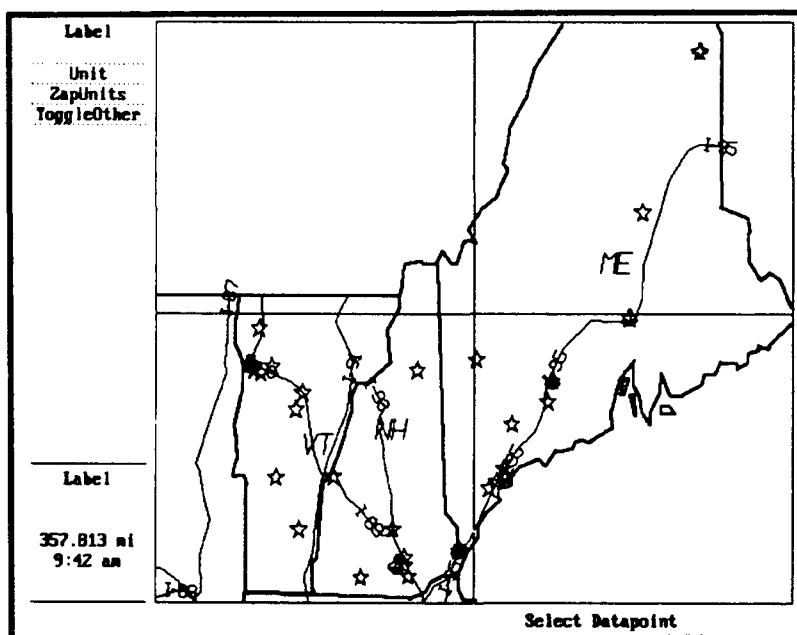


FIG. A-22. CROSS HAIRS IN LOCATION SELECTION

¹You can control how far the cross hairs move each time you hit the arrow keys by hitting the numbers 1 through 9. Hitting "1" will cause the arrow keys to move the cross hairs only a very small amount; "9" will move them much more; and "4" is the default and should be used when selecting menu items.

For three reasons, there may not be enough space to place a label on the map:

- Only two labels may be assigned to the same point. If more than two units are at the same point, then only two of the units' labels can appear there.
- There may not be enough room between the point and the margin of the map to fit the label (see Lesson 18: Panning, to change the center of the map to allow for more room).
- Other labels for other map objects (cities, highways, etc.) may be in the way. They can be cleared with the "ToggleOther" option, which turns labeling on and off for all the labeled items. Use it as follows:
 - ▶ Highlight "ToggleOther" and hit "Enter." This will cause the map to be redrawn without any labels except unit labels.
 - ▶ Label the units you wish to label.
 - ▶ Highlight "ToggleOther" and hit "Enter" to make all other labels that will fit reappear.

You can clear the unit labels that you have plotted with the "ClearUnits" option. In order to leave the labeling process and return to the main menu, hit "Esc."

Lesson 15: Displaying Data

You can display the data corresponding to a point by selecting the "Data" option of the main menu (highlight "Data" and hit "Enter"). Proceed as follows:

- MapInfo will display cross hairs, which you position to the data point to be displayed. Move the cross hairs to the point whose data you wish to display and hit "Enter."
- MapInfo will display a large arrow and ask you to confirm your point selection. Hit "Enter" to confirm the selection or "Esc" to try again with the cross hairs.
- If more than one unit is located at the point, a popup will appear showing the list of units from which you can select the one you wish to see. Navigate through this list by using your arrow keys. Place the arrow at the unit you choose and press "Enter." More units may be located at the point than can be displayed in the popup on the screen. If so, you can view the complete list by hitting the "PgUp" and "PgDn" keys.

Press "Esc" to return to the main menu.

Lesson 16: Changing the Zoom

You can change the area displayed while maintaining the same center point, by selecting the "Zoom" option:

- Select "Zoom" from the main menu (highlight "Zoom" and hit "Enter").
- Type the new zoom value in miles and hit "Enter" and MapInfo will redraw the map.

Zooming in and out on the map can cause more and less detail to appear. Zooming out to beyond 100 miles (101 miles or more) makes only large cities appear on the map. Zooming out to beyond 300 miles makes the three-digit zip code boundaries disappear. Zooming out to beyond 500 miles makes even the large cities disappear.

Note that if you have any units labeled on your map, the labels will be resized proportionally to the change in the zoom. Those labels can be removed and replaced using the "Label" option of the main menu (see Lesson 14: Labeling Units).

Lesson 17: Magnifying an Area

You can magnify parts of the map with the "Magnify" option. It allows you select a rectangle to magnify with the cross hairs. Follow these steps to select magnify:

- Move the cross hairs to one corner of the area to magnify and hit "Enter."
- Move the cross hairs to the other corner and hit "Enter" and the map is redisplayed.

At any step along the way, you can hit "Esc" to back up to the previous steps.

Lesson 18: Panning

You can pan through the map by selecting the "North," "South," "East," "West," and "Center" options of the main menu. The direction options move the map one-half screen in the selected direction. The "Center" option displays cross hairs to allow you to define a point to be the center of the map. Move the cross hairs to the point you wish to be the center, hit "Enter," and MapInfo will redraw the map.

Lesson 19: Printing

If you have a graphics printer, you can print the map you are currently viewing. Select the "Print" option from the main menu and proceed as follows:

- The initial screen is shown in Figure A-23. This allows you to control options in the printing of your map. You will not normally want to change this screen. To control these options see your MapInfo users guide. Otherwise, simply hit "Enter."
- Next you will see a screen similar to that shown in Figure A-24 that allows you to select the area to be printed. A page-shaped box is superimposed on your screen which you can move with the cursor keys to select the area you wish to print.

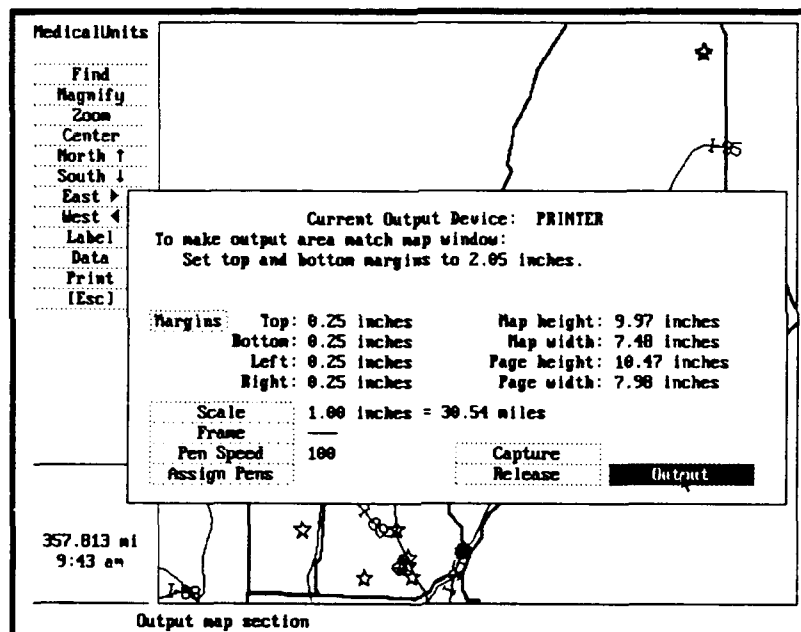


FIG. A-23. PRINT OPTIONS SCREEN

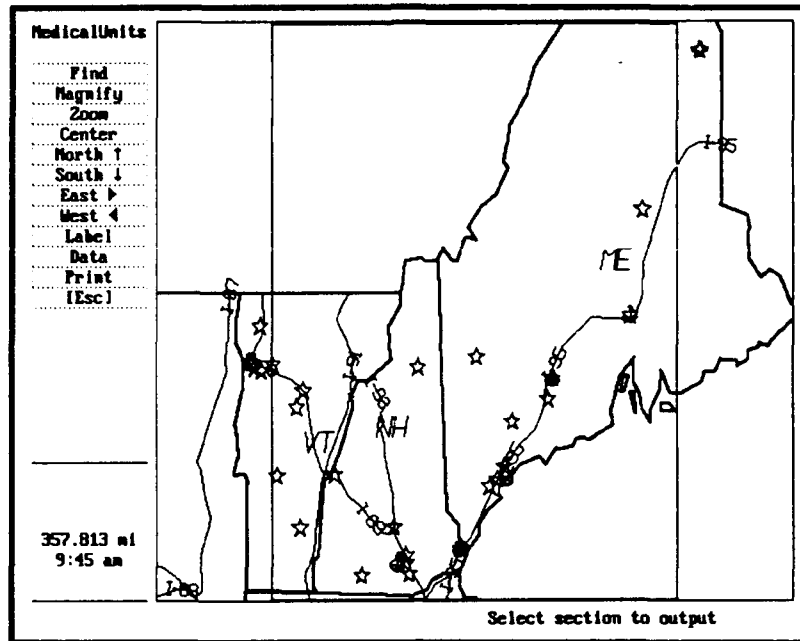


FIG. A-24. PRINT AREA SELECTION

ANNEX

DISPLAY, PRINTER, AND PLOTTER DEVICES SUPPORTED BY MAPINFO

Geographic output on the display or in hard copy with MapInfo (Version 4.0) can support the following devices:

- **Display devices:**

- ▶ AT&T 6300 Monochrome
- ▶ AT&T 6300 Color
- ▶ Compaq Portable III
- ▶ CGI Driver for DGIS Devices
- ▶ Hercules InColor
- ▶ Hercules Monochrome Adapter
- ▶ High Resolution Enhanced Graphics Adapter (EGA)
- ▶ IBM 8514/A
- ▶ IBM 8541/A
- ▶ IBM Color Graphics Adapter – High Resolution Monochrome
- ▶ IBM EGA
- ▶ IBM PS/2 Mode 11 (VGA)
- ▶ IBM PS/2 Mode 12 (VGA)
- ▶ IBM MGA/VGA Mode 13
- ▶ Toshiba 3100

- **Printers and plotters:**

- ▶ Calcomp Ext 960 Plotters
- ▶ Cannon Laser Beam Printer 8II
- ▶ Diconix Low Resolution Inkjet Printer
- ▶ Diconix High Resolution Inkjet Printer
- ▶ Epson LQ Series Printers
- ▶ Epson LQ Series Color Printers
- ▶ Epson X
- ▶ Hewlett Packard DeskJet
- ▶ Hewlett Packard LaserJet +
- ▶ Hewlett Packard Paintjet (180 or 90 dpi)
- ▶ Hewlett Packard Plotters
- ▶ Hewlett Packard Quietjet Printer
- ▶ Hewlett Packard Thinkjet Printer
- ▶ HPGL Output Only Plotters

- Houston Instrument Plotters
- IBM Color Graphics Printer
- IBM Graphics Printer
- IBM Proprietary
- IBM Proprietary II
- IBM Proprietary XL24
- IBM Quietwriter II
- IBM Quietwriter 3
- NEC Pinwriter P5
- NEC Pinwriter P5XL
- Okidata 290-Series Printer
- PostScript Printers
- Roland DG Plotters
- Tektronix 4695/4696 Color Printer
- Toshiba Printer
- Versatec Printer

Refer to the MapInfo Command Reference, Appendix A, for details on installation of the device drivers and options for these devices.

APPENDIX B

THE DIRECTORY OF SELECTED RESERVE MEDICAL PERSONNEL MAINTENANCE MANUAL

SYSTEM OVERVIEW

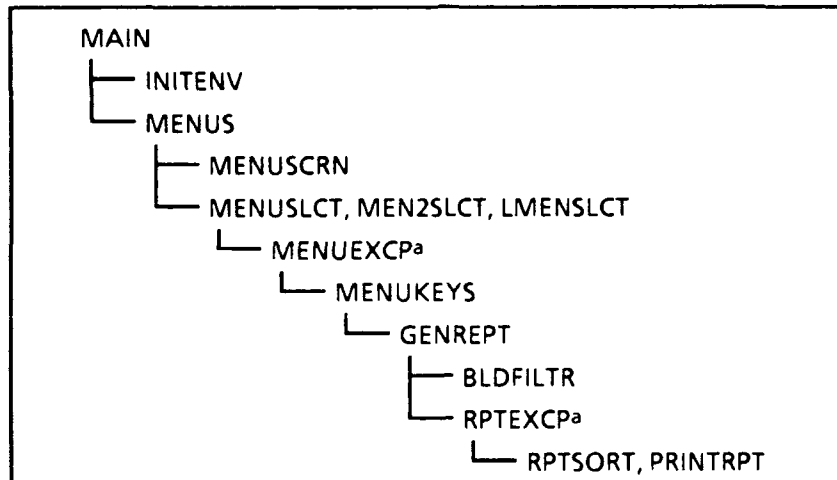
The system was designed to run on an IBM-compatible 80286-based system with 640K of random access memory (RAM) and 14 megabytes of disk storage. Performance is significantly enhanced when run on an 80386 system with a fast disk drive. It was developed in Clipper, Summer 1987 Version (Nantucket Corporation, Los Angeles, California) to use data files that can be maintained in FoxBASE+ or dBASE. (Indexes must be produced in Clipper.) The mapping portion of the system was developed with MapInfo Version 4.0, MapCode, and the MapPack Sampler (MAPINFO Corporation, Troy, New York); and Switch-It Version 1.00 (Black & White International, Inc., New York, New York) to free memory for the mapping session.

The main program resides in the root directory for MapInfo (described in Figure B-1) with data base files in the DBF subdirectory. Source code is located in the subdirectory PRG and the data aggregation program and inventory and unit address files are in the subdirectory AGGREG. MapInfo cannot be installed by copying the diskettes onto a hard disk drive. Annex 1 presents the MapInfo installation procedures.

MODULE STRUCTURE

The main module of the system MAIN.PRG calls the system initialization module INITENV.PRG, which defines system parameters such as screen colors. MAIN.PRG then calls MENUS.PRG. This program loads the lists of choices for each selection criterion into arrays. MAIN.PRG then calls MENUS.PRG which waits for keystrokes during selection criteria processing and handles the operation of the selection criteria choice lists.

MENUS.PRG calls one of the generalized list selection programs (MENUSLCT.PRG, MEN2SLCT.PRG, or LMENSLCT.PRG) to control the selection process. An action initiated from one of these programs is handled in one of three



^a System function, not a separate module.

FIG. B-1. SYSTEM MODULE STRUCTURE

modules: the MENUEXCP function (called by the Clipper ACHOICE function), the generalized list selection program itself, or MENUKEYS.PRG, which is called by the generalized list selection program to handle certain keystrokes. MENUS.PRG calls MENUSCRN.PRG to repaint the screen when necessary.

If the key to generate a report is pressed, the generalized list selection program being executed calls MENUKEYS.PRG, which then calls GENREPT.PRG. That module, which controls the preparation and displaying of reports, first calls BLDFILTR.PRG, which copies MASTDB.DBF records to a temporary report data base, filtering with the requested selection criteria. The data base is then displayed using the Clipper DBEDIT function.

The module FUNCTNS.PRG contains various functions, the most significant of which is RPTEXCP. DBEDIT calls RPTEXCP whenever a special action key (such as the report sort key, print key, or escape key) is pressed while viewing the report. When a sort is requested, RPTEXCP calls RPTSORT.PRG. When print is requested, PRINTRPT.PRG is called. Figure B-1 shows the structure of the system modules.

SYSTEM FILES

In order to run the system, MAIN.EXE must be present in MapInfo's root directory in addition to the MapInfo files and the DBF subdirectory must contain the following files:

COMPOS.DBF	Component selection list items
CORPS.DBF	Corps selection list items
LOCTYPES.DBF	Items for the location selection types list
MASTDB.DBF	Unit data base used by the system; described in Annex 2
RPTSTRUC.DBF	Report fields to be displayed by DBEDIT
SORTFLDS.DBF	Field combinations to sort on and contains sort menu entries
STATES.DBF	State selection list items
TEMPLATE.DBF	Field structure of MASTDB
UNITTPS.DBF	Medical/nonmedical selection list items
ZIP1.DBF	One-digit zip code selection list items
ZIP3.DBF	Three-digit zip code selection list items
STATE.NTX	Index on the STATE field in MASTDB.DBF
ZIP.NTX	Index on the ZIP field in MASTDB.DBF
UIC.CNF	MapInfo configuration file
UIC.APP	MapCode application file
MAPINFO.PER	Tailored MapInfo "personality" file (replaces MapInfo-provided version)
SYMBOLS.TXT	Modified symbols file (replaces MapInfo-provided version).

Names or order of choice items in a selection list can be changed by modifying or altering the order of records in the data base used to generate that list. The order of items in the main location selection list (e.g., All Locations, By State, etc.) should not be altered because the source code will need to be altered throughout the system.

The appearance of a displayed report can be altered by modifying the fields in RPTSTRUC.DBF. A record, which describes a report column, can be added or deleted

to include or exclude a MASTDB field from the report. Records can also be modified to adjust report column widths and column headings. The total width of the report, however, should not exceed 80 columns.

A new combination of sort fields can be added by modifying SORTFLDS.DBF, which is used to display the sort options menu and contains the names of the fields on which to sort. In some cases, such as when a new sort needs to be in descending order, the KPTSORT.PRG modules will also need to be changed.

The MASTDB.DBF file and the two index files STATE.NTX and ZIP.NTX are maintained by the data aggregation program. If MASTDB is altered, the indexes should be rebuilt by running REINDEX (see "Reindexing the Data Base Files"). If location (e.g., the STATE or ZIP field) data are changed, the affected MASTDB records will need to be geocoded (see "Geocoding the Master System Data Base" in this appendix) and ZIPDIST.DBF will need to be regenerated (see "Creating the ZIPDIST File" in this appendix) prior to REINDEX being run.

DATA PREPARATION

This section describes the utility programs and procedures for creating and maintaining the system data files.

Data Aggregation

The aggregation of inventory data to create MASTDB.DBF is performed by the program AGGREG with no command line parameters. In order to perform the aggregation, the following files must be present in the AGGREG subdirectory:

AGGREG.EXE	Main aggregation program; compiled from AGGREG.PRG in same directory
AF.DBF	New Air Force inventory data
ARMY.DBF	New Army inventory data
NAVY.DBF	New Navy inventory data
RA.DBF	File of all available unit addresses.

In addition, MASTDB.DBF, STATES.DBF, and ZIP3.DBF must be present in the system root directory. Descriptions of the inventory file structures appear in Annex 3.

Upon the successful completion of the aggregation program, the following files will have been created in the AGGREG subdirectory:

MASTDB.DBF	New file; does not affect version in DBF subdirectory
STATES.DBF	Updated if necessary; leaves version in DBF subdirectory undisturbed
ZIP3.DBF	Updated if necessary; leaves version in DBF subdirectory undisturbed
STATE.NTX	New file; does not affect version in DBF subdirectory
ZIP3.NTX	New file; does not affect version in DBF subdirectory
AFPROB.DBF	(Conditional) AF.DBF records whose unit identification code (UIC) does not match a UIC in RA.DBF or whose Duty Air Force Specialty Code (DAFSC) does not fit into one of the defined corps
ARMYPROB.DBF	(Conditional) ARMY.DBF records whose UIC does not match a UIC in RA.DBF or whose Duty Military Occupational Specialty (DMOS) does not fit into one of the defined corps
NAVYPROB.DBF	(Conditional) NAVY.DBF records whose UIC does not match a UIC in RA.DBF or whose designator does not match one of the defined corps.

New records are added to the end of STATE.DBF and ZIP3.DBF for values not already in these files. They should be examined, and unwanted values, such as STATE = " " should be deleted. Names should be added to the new state abbreviations in STATE.DBF. Finally, these files should be sorted and copied into the DBF subdirectory.

MASTDB.DBF is created from scratch each time AGGREG is run. Changes made manually to address data in MASTDB must also be made to the master unit address file RA.DBF in order for the changes to appear in future versions of MASTDB.

Geocoding the Master System Data Base

Once the master file is created, it must be geocoded to determine the longitude and latitude values based on the zip code for each record. It is geocoded by using the MapInfo geocoding capabilities described in the MapInfo users guide. First, the majority of the MASTDB records can be geocoded by zip code. Units in Puerto Rico

should be geocoded by state and the remainder (Guam and the Virgin Islands) can be geocoded by pointing.

When a previously geocoded MASTDB file has had changes made to the STATE or ZIP fields of some records, the XCOORD and YCOORD fields of those records must be replaced with -1. Records with positive values in those fields will not be geocoded again.

Creating the ZIPDIST File

In order to perform zip-radius selections, the ZIPDIST.DBF file must be recreated and indexed each time a new version of MASTDB.DBF is generated or modified. MASTDB.DBF, ZIPDIST.BAT, ZD.EXE, and ZIPDISTB.DB must be present in the AGGREG subdirectory, where ZIPDIST.DB will be generated.

First, import the MASTDB.DBF file created by the data aggregation process described above into the Paradox file MASTDB.DB (Tools, ExportImport, Import, 2) dBASE III). Then run a Paradox query (Ask) on MASTDB, checking (F6) the fields ZIP, XCOORD, and YCOORD. When the query has finished processing, rename the answer file ANSWER to ZIPDB (Tools, Rename, File). Delete ZIPDB records with a blank ZIP field or with XCOORD or YCOORD = -1, and then exit Paradox. Then run the batch file ZIPDIST.BAT (which runs ZD.EXE) which will produce the Paradox file ZIPDIST.DB. This takes several hours to run. At the conclusion, re-enter Paradox and export the file ZIPDIST.DB in dBASE format to the file ZIPDIST.DBF (Tools, ExportImport, Export, 2) dBASE III).

At this point, the Paradox files used for this step, ZIPDB.DB, MASTDB.DB, and ZIPDIST.DB, can be deleted, and the new files created in the AGGREG subdirectory can replace the older versions of the same files in the DBF directory.



Reindexing the Data Base Files

The REINDEX program, located in the DBF subdirectory, generates all of the system indexes. This program should be run after creating ZIPDIST.DBF and any time a data file is changed.

ANNEX 1

INSTALLING MAPINFO

MapInfo should be installed in the root directory used for the system. During installation, the MapPack sampler should be installed. After installation, the SYMBOLS.IN file should be copied into the root directory. MapInfo should then be run with "File Utilities" selected from the main menu. Then, the following menu items should be chosen in sequence:

- Generate vector fonts
- Yes (directory in which import file is located)
- SYMBOLS.IN (select file to import)
- Yes (directory in which to create font file)
-  Enter (enter font file root name)
-  Enter (confirm that SYMBOLS.TXT already exists and should be overwritten).

Then exit MapInfo.

Make sure the UIC.APP, UIC.CNF, and MAPINFO.PER files are copied into MapInfo's root directory *after* MapInfo has been installed. This is necessary to overwrite MapInfo's version of these files. The first time MapInfo is run from the system (using the F6 "Gateway to MapInfo" key), it may need to generate some index files; it may therefore be desirable to generate a short report. Successfully "zooming in" (using MapInfo's Zoom feature) to within 5 miles and out to at least 101 miles should verify that all files are present and indexed.

ANNEX 2

FILE DESCRIPTION OF MASTDB.DBF

field	Type ^a	Bytes	Description
RECNUM	N	4	Used to show record number being viewed when report is displayed, determined by the AGGREG.EXE program
UIC	C	6	Unit ID Code, from RA.DBF
SERVICE	N	2	Code used by MapInfo to display symbol for unit (79 Air Force, 83 Army, 90 Navy) determined by AGGREG
COMPO	C	4	Reserve component, determined by AGGREG
NAME	C	30	Unit Name, from RA.DBF
STREET	C	35	Local address of unit, from RA.DBF
STREET2	C	30	Continuation of local address, from RA.DBF
CITY	C	28	City, from RA.DBF
ZIP	C	5	Zip code, from RA.DBF
ZIP2	C	4	Zip code extension, from RA.DBF
PHONE	C	10	Phone number including area code, from RA.DBF
MEDUNIT	C	1	"Y" or "N" for whether unit is a medical unit, from RA.DBF
ENLISTED	N	3	Number of medical enlisted troops, calculated by AGGREG
WARRANT	N	3	Number of medical warrant officers, calculated by AGGREG
OFFICERS	N	3	Total number of medical officers, calculated by AGGREG
MEDICAL	N	3	Number of medical corps, calculated by AGGREG
NURSE	N	3	Number of nurses, calculated by AGGREG
MEDSPEC	N	3	Number of medical specialists, calculated by AGGREG
DENTAL	N	3	Number in dental corps, calculated by AGGREG
VET	N	3	Number of veterinarians, calculated by AGGREG
MEDSERV	N	3	Number in medical services corps, calculated by AGGREG
BIOMEDSCI	N	3	Number of biomedical scientists, calculated by AGGREG
XCOORD	N	9	Longitude of unit, geocoded by MapInfo
YCOORD	N	9	Latitude of unit, geocoded by MapInfo

^a N = numeric data, C = alphanumeric data.

ANNEX 3

REQUIRED FIELDS FOR THE INVENTORY AND RESERVE UNIT ADDRESS FILES

AF.DBF – THE AIR FORCE INVENTORY FILE

The Air Force inventory file is a file of current Air Force inventory data. It should be created each time new data are to be aggregated into a new version of MASTDB.DBF. All fields should be left-justified character fields.

<u>Field</u>	<u>Description</u>
UIC	Unit identification code
COMP	"5" Air Force Guard, "6" Air Force Reserve
GRADE	First character is "0" Enlisted, "2" Officer
DAFSC	Duty Air Force Specialty Code; numeric code can be preceded by an alphabetic character.

ARMY.DBF – THE ARMY INVENTORY FILE

The Army inventory is to be aggregated to a new version of MASTDB. All fields should be left-justified character fields.

<u>Field</u>	<u>Description</u>
UIC	Unit identification code
COMP	"1" Army Guard, "2" Army Reserve
GRADE	First character is "0" Enlisted, "2" Officer
DMOS	Duty Military Occupational Specialty.

NAVY.DBF – THE NAVY INVENTORY FILE

The Navy inventory file is a file of current Navy enlisted and officer inventory data. This file should be created each time new data are to be aggregated into a new version of MASTDB. All fields should be left-justified character fields.

<u>Field</u>	<u>Description</u>
UIC	Unit identification code
DESIG	Designator (job code).

RA.DBF - THE RESERVE UNIT ADDRESS FILE

The reserve unit address file is a list of all reserve units containing the address data used in MASTDB.DBF. It is not recreated for each aggregation, but rather updated with new addresses of units written to the problem files (AFPROB.DBF, ARMYPROB.DBF, NAVYPROB.DBF) during aggregation. It contains the fields UIC, NAME, STREET, STREET2, CITY, STATE, ZIP, ZIP2, PHONE, and MEDUNIT of the same length and type as described for MASTDB in Annex 1.

ANNEX 4

LINKING THE SYSTEM FILES

The system executable file MAIN.EXE was created by compiling the Clipper modules and then linking the object files with the Microsoft 8086 Object Linker Version 3.05. Version 3.05 of the Microsoft Object Linker is part of DOS 4.0. The Clipper modules can be compiled using the syntax:

```
CLIPPER <module__filename> -M -Q
```

To link, create a "link file" and invoke the linker as follows:

```
LINK/SE:256 @<linkfile__name>
```

The link file is an American Standard Code for Information Interchange (ASCII) file containing four entries. The first entry lists the object modules to be linked (with optional path names) separated by the plus sign (+). When the list is split over multiple lines, each line except the last must end with a plus sign. The first object module listed must be the HEADER7.OBJ file (required for Switch-It). The next entry of the link file is the name of the executable file (with optional path name). The third entry contains a name for a map file, if desired, or blank for no map. The final line contains the required Clipper library files, separated by spaces. (Currently CLIPPER.LIB and EXTEND.LIB are needed.)

The following is an example of a link file (directory and drive names may vary with your configuration):

```
ENTRY 1  c:\switchit\header7.obj + main.obj + initenv.obj + menus.obj +  
          menuscrn.obj + genrept.obj + menukeys.obj + menuslct.obj + lmenslct.obj  
          + bldfiltr.obj + functns.obj + men2slct.obj + rptsort.obj + printrpt.obj +  
          ziprad.obj + filter.obj + c:\switchit\switchu7.obj
```

```
ENTRY 2  ... \main.exe
```

```
ENTRY 3
```

```
ENTRY 4  d:\clipper\clipper.lib d:\clipper\extend.lib
```

To create the maintenance programs AGGREG.EXE and REINDEX.EXE, they should be compiled using the command line described above. Although a link file could be created as described above, it is just as easy for single-module programs to invoke the linker by typing LINK on the command line (/SE:256 is not needed for single-module programs) and respond to the four prompts which correspond directly to the four links of the link file: object file name, executable file name, map file name, and libraries required (AGGREG uses CLIPPER.LIB and EXTEND.LIB; REINDEX uses CLIPPER.LIB). Each prompt provides a default choice in square brackets ([]) which can be accepted by just pressing the [↵Enter] key.